

# PATENT SPECIFICATION

DRAWINGS ATTACHED.

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## COMPLETE SPECIFICATION.

### An Improved Door Handle Assembly.

We, OTTO GROSSSTEINBECK GmbH, a German Company of Friedrichstrasse 116, 562 Velbert, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to an improved door-handle assembly in which two door-handles are fastened on opposite sides of a door.

It is an object of the invention to produce an invisible connection for door-handles which is guaranteed not to slacken.

According to the present invention there is provided a door-handle assembly comprising two door handles each of which has a shaft formed with an axial bore, the bore in one of the handles being threaded and a bolt one end of which is externally threaded and screwed into the threaded bore in the said one handle and the other end of which is slidably engaged in the axial bore in the other handle, wherein the other end of the bolt is provided with a lateral face which is inclined to the axis of the bolt, the shaft of the other handle is formed with a threaded transverse bore and a clamping screw is threadedly engaged in the transverse bore so as to engage the said inclined lateral face which acts as a camming face creating a force acting on the said one handle in one direction and an opposite force on the bolt and the other handle to brace the handles against the opposite faces of the door.

A preferred form of the invention is described below with reference to the drawing in which

Fig. 1 is an elevation, partly in section of a door-handle assembly and,

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Fig. 2 is an enlargement of a part of Fig. 1.

In the drawings is shown a door-handle assembly in which two door handles 2 and 3 are fastened on opposite sides of a door 1. A shaft 4 of one door-handle 2 is arranged co-axially with a shaft 5 of the other door-handle 3, and the shafts 4 and 5 of the two door handles 2 and 3 are joined together at an axially variable distance by a connecting bolt 6 and braced against the opposite faces of the door 1 in a manner described below.

The shaft 4 of door handle 2 has a bore 7 formed with a screw thread 8 into which one end 9, which is also provided with a screw thread, of one connecting bolt 6 is screwed to the desired extent. The lengths of the thread 8 in the bore 7 and of threaded portion 9 of the connecting bolt 6 correspond to approximately a third of the total length of the bolt. Spaced axially from the other end of the connecting bolt 6, which other end is engaged in a bore 10 in the shaft 5 of the other door-handle 3, there is provided an inclined face 11 which forms an acute angle with the longitudinal axis of the bolt. The inclined face comprises a portion of the surface of a cavity 12, which is milled along the length of the connecting bolt 6, and which extends over approximately 20mm in length.

A clamping screw 13, which is threadedly engaged in a transverse bore 14 in the shaft 5 of the other door-handle 3, engages the inclined face 11 of the connecting bolt. The outer face of the clamping screw 13 is provided with a slot 15 to receive a screw-driver and its inner end 16 is approximately conical.

The door-handles are assembled by screw-

ing the connecting bolt 6 into the bore 7 of the door-handle 2. The connecting bolt 6 is then inserted through an opening 17 in the door 1 and the length of the free end of the connecting bolt, which projects out of the door, is adjusted by screwing the connecting bolt into or out of the door-handle 2 until the other end of the bolt 6 protrudes from the door by about 30mm.

10 The door-handle 3 is then fitted over the projecting end of the bolt and the clamping screw is threaded down into the transverse bore 14 of the shaft 5, so that the end 16 of the clamping screw meets the inclined face 11. The camming effect between the screw and the face 11 produces two forces working in opposite directions, one of which, exerted in the direction of the arrow x across the clamping screw, acts on the shaft 5 of the door-handle 3 and the other of which, exerted in the direction of arrow y, acts through the connecting bolt 6 and on the door-handle 2 in the opposite direction so that the door-handles 2 and 3 are firmly braced against opposite faces of the door.

It will be apparent from the above that a rattle-resistant door-handle connection is produced in which the fastening means cannot be seen since the clamping screw 13 is located in such a position that it cannot be seen by a person using the door.

#### WHAT WE CLAIM IS:—

1. A door handle assembly comprising two door handles each of which has a shaft formed with an axial bore, the bore in one of the handles being threaded and a bolt one end of which is externally threaded and screwed into the threaded bore in the said one handle and the other end of which is

slidably engaged in the axial bore in the other handle, wherein the other end of the bolt is provided with a lateral face which is inclined to the axis of the bolt, the shaft of the other handle is formed with a threaded transverse bore and a clamping screw is threadedly engaged in the transverse bore so as to engage the said inclined lateral face which acts as a camming face creating a force acting on the said one handle in one direction and an opposite force on the bolt and the other handle to brace the handles against the opposite faces of the door.

2. An assembly as claimed in claim 1, wherein the threaded portion of the bolt and the threaded bore in the said one handle are each approximately equal in length to one third of the total length of the bolt.

3. An assembly as claimed in claim 1 or 2, wherein the said inclined face comprises a portion of the surface of a cavity extending lengthwise along the bolt.

4. An assembly as claimed in claim 3, wherein the cavity is approximately 20mm in length.

5. An assembly as claimed in any of claims 2 to 4, wherein the outer face of the said screw is formed with a slot to receive a screwdriver and the inner end is approximately conical.

6. A door handle assembly substantially as described herein with reference to the accompanying diagrammatic drawing.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale*

FIG.1.

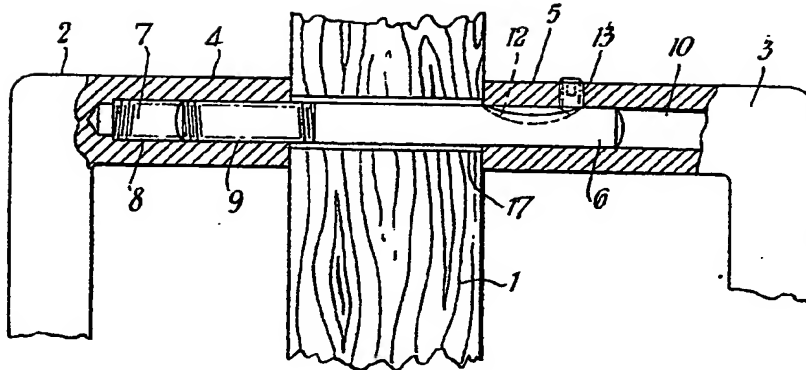


FIG.2.

